1: Hollis G-5 (ca. 1894-1904) 1905
FL12 Masai FL12

Ten eboitare ol-móruo engerai enye araki en-o-'l-poror lenye, torono. Ten eniñg ol-poror lenye, nēari, negili eng-añg, nēyeñgi 'n-gīshu náiyōuni.

If an old man commits adultery with his daughter or with a girl of her age, it is considered a serious crime. The other old men if they hear of it beat him, pull down his kraal, and slaughter whichever of his cattle they want.

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[561]

'M-bwat.

Nēji en-dōki naji em-bwata, naa 'l-ala aare eitauni li-abori.

The extraction of teeth.

There is something called em-bwata, which means the extracting of the two middle incisors of the lower jaw.

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A knife is used with which to perform the operation.

Neitauni te-'ng-alem.

Eisho 'l-Maasae: nebwa 'ngera enye kat'-are. Ten eīni en-gerai, pe ebaya 'l-apaītin isyet, etubulutua 'l-ala ṗōkin, nebwai. Netonii.

The Masai extract their children's two middle teeth twice. They extract them first of all when the child is about eight months old, and all its teeth have grown. Then they wait.

Nepwo 'l-ala ṗōkin, neiñgwari 'l-opa-ootubulutua. Ore p' eitōki aabulu 'l-ala ṗōkin, nebaya en-gerai anaa en-oo-'l-arin tomon o aare, nebwai em-bwata e-kitoo, nemeitōki aabulu.

After the child has lost all its milk teeth and obtained the permanent set, i. e. when it is about twelve years old, the teeth are extracted a second time, and never grow again.

Ore p' eidip aatōbwa engerai, nesirieki eng-omom il-mur loo-'sirkon, nēji: 'I'rōbija.'

When a child has had its teeth extracted, donkey's dung is put on its face in order to cool it.

[237]

Ore opa p' eiteruaki aabwa 'l-tuñganak ēji, pe ten emweiyu ol-tuñgani, p' eitere, neony il-ala, neimyeki eng-are innabwata natōbwaki opa.

The origin of this custom of extracting teeth was to enable people, in the event of a man falling ill or being on the point of death, when his teeth would pain him, to pour water through the orifice [1].

[1] Hinde (*The Last of the Masai*, p. 42) writes: 'The origin of this custom is supposed to date back to a time when tetanus was a great scourge amongst the Masai, and they discovered that it was a comparatively simple matter to feed a man suffering from lockjaw if two of his front teeth were missing.'

[113]

1: Hollis G-5 (ca. 1894-1904) 1905
FL12 Masai FL12

304 Naa, ten eata opa 'l-tuñganak
●752 pôkin in-jilalo oo-'l-ala le-keper mme ana'-'ata eiyôuni naleñg im-bwat. Ore taata etamooki em-bwata.

[626] Tenedol il-Maasae ol-tuñgani lemebwa, nekwenikye aajo: 'Eñgárie 'sirkon en-daa.'

Had people formerly extracted the upper teeth, they would not have required the hole in the lower jaw. But now they have become accustomed to the latter.

When the Masai see a man who has not had the two middle incisors extracted, they laugh at him, and say: 'He eats his food like a donkey.'

Em-barnore.

302 Ebarn il-móruak oo' ñgorôyok oo 'n-gera oo-'l-Maasae 'l-lughuny oo 'l-papit loo-'ng-onyek le-keper, neput il-papit loo-'ng-onyek li-abori ten eirugo pe erim eng-oñgu.

Neput araki nebarn sii 'l-munyo oo 'n-gitikit oo 'n-goleshi; nepej kulikae 'l-papit loo-'l-oresheta, nepal kulikae.

Teni mepuroo il-muran, nemebarn il-lughuny metabana
[574] nêuni, neitubulu 'l-taighan.

Ore ten eîu e-ñgorôyôni en-gerai, nemebarn ninye o en-gerai enye metabana nebulu

Shaving.

Masai elders, women[1], and children shave their heads and eyebrows, and pull out their eyelashes if they enter their eyes.

They also pull out or shave the hairs of the beard, armpits, and pubes, and some singe the hairs of their shins.

If warriors are not in mourning[2], they may not shave their heads until they have held the feast called e-unoto[3], and they grow pigtails.

When a woman gives birth to a child, neither she nor the child are shaved until the latter has four

[113] [171] [174] Sir H. Johnston, in commenting upon this, says (*The Uganda Protectorate*, p. 803): 'It may be this explanation has been invented recently to explain a very ancient custom inherited by the Masai from the Nilotic stock, which was their origin; for amongst these people the removal of the lower incisor teeth is a very common practice.' Hinde's explanation, however, appears to be very widely spread.

[171] [1] This very uncommon practice for women to shave their heads is also followed by the Dinkas, Baris, and Latukas (Cummins, 'Sub-Tribes of the Bahr-el-Ghazal Dinkas,' *Journal of the Anthropological Institute*, June, 1904; and Baker, *The Albert Nyanza*, p. 90, &c.).

[2] *Vide* p. 306.

[3] *Vide* p. 299.

1: Hollis G-5 (ca. 1894-1904) 1905
FL12 Masai FL12

Il-baa oo 'l-abaak.

Ten eñgori ol-murani loo-'l-Maasae, aagil ol-oïto le-'ng-aina araki le-'n-geju, netii 'l-abaak ooiyōlo aatabak.

Neduñg in-giri; ore p' eidip, neitau 'rarat, neiruburub il-oik, nerip too-'n-opin, nēāṇ naleñg.

Ore en-daa e-illo-tuñgani naa 'n-giri naapejo ake enya, ore ol-chani ōok naa ol-kiloriti aitaa eng-are.

Ore ten eñgori ol-tuñgani eng-oshoghe, nepuku 'monyit, nebaki áitau nekwa-naarumisho, neisuji, nerinyōkīni eng-oshoghe, nebukōkīni e-ilata e-'n-gerr, neripi.

Ore ten eñgori ol-tuñgani, negili ol-arasi, nōyeñgi inne-wēji, nepiki ol-arasi le-'n-gerr, nebukōkīni e-ilata e-'n-gerr, neripi.

Mēok ol-tuñgani oñgoro kulle, 'n-giri ake einos.

Naa, ten eñgori ol-murani te-'m-bae naata e-saiyet, nōyeñgi en-giteñg naitayu e-nyawa, neitauni 'n-gipa, neishori lido-oñgoro metooko pe egurumu e-saiyet, neishiu.

Ore ten edol il-abaak ol-tuñgani lemeruburubayu ol-

Wounds and Surgeons.

If a Masai warrior is shot, and an arm or leg broken, the surgeons are able to mend it.

They cut through the flesh, take out the splinters and bring the edges of the bone together, after which they stitch up the wound with the sinew from the back of an ox, and bind the limb securely.

The only food that is given to a man with a broken limb is roast meat and the thirst-quenching medicine obtained from *Acacia abyssinica*.

Should a man be shot in the belly so that the intestines protrude, the wound is washed and the intestines returned to their place; sheep's fat (a quart or more) is poured into the wound, which is then stitched up.

Again, if a man is shot and a rib broken, the flesh is skinned from the wound, and a sheep's rib is inserted in place of the broken one. Sheep's fat is then poured into the wound, after which it is sewn up.

The wounded man is not allowed to drink milk, and may only eat meat.

If a man is shot with a poisoned arrow, a pregnant cow is slaughtered, and he is given the caul fat to drink. This causes him to vomit and he recovers.

If the surgeons see that a man's bone cannot be mended, they fasten

1: Hollis G-5 (ca. 1894-1904) 1905
FL12 Masai FL12

oïto, nëän 'ñgonyo pe etum áitírie inne-wëji netigile.

Neiyölöu sii 'l-abaak aategelem araki áidoñgo 'l-oiñgok, oo 'l-merigeshi, oo 'l-oroi. Ore ten egelem il-oiñgok, negor te-'n-gäne ol-gos, pe etum aatañgor ten eitashe e-ñgony, amu ëjo teni meñgor, neijëyu 'sapo.

a ligature round the limb and amputate it.

The surgeons are also able to castrate bulls, rams, and he-goats by either removing or crushing the testicles. When bulls are castrated, a cord is fastened tightly round their necks and blood is extracted from the jugular veins to prevent inflammation of the injured parts[1].

Il-deketa loo-'l-Maasae.

Ol-akaishopo en-napyak !
Mikinjopo en-napyak !
Mikinjírie eng-Aï !
Mikinosa ol-öwaru !
Injirtita !
Imbusu !

Mikinjoo eng-Aï en-dap e-'n-jöni !

Tanañga náisula !

Todoroi !
Tanañga añgata !
Mikitaara 'l-kulinyi !

Ten edek il-Maasae 'n-gera, nemedek naleñg, aajo :

E-soit !
En-gumoto !

Masai curses.

May you be clothed with an incurable disease !
May God trouble you !
May a beast of prey devour you !
Slip on the road and fall !
May you become the colour of a corpse !

May God give you a palm of leather ! (i.e. may your cattle die, in which case you will be forced to do manual labour.)

Die with those who have been conquered !
Die when the sun sets !
Die in the plain !
May your own people kill you !

When the Masai curse children, they do not call them very bad names. They say, for instance :
Stone !
Pit !

En-gitorojata oo-'l-Maasae.

Ten ëjo ol-lee oo-'l-Maasae en-döki, pe ëji el-lejare, ore

Masai form of oath.

If a Masai man says something, and it is believed to be a lie, it is

[1] A description of the operation was given in *The Veterinarian* (Stordy), October, 1900.

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[For generic names of plants and for their uses in animal husbandry, medicine, and nontherapeutic drug manufacture, see category 824.]

/62 cont./
881 in a long leather apron reaching to the feet (ol gelá, el geláni),
[292] which his mother has made for him for this purpose. On the following day all the boys to be circumcised appear before sunrise at a place in the vicinity of a kraal, chosen by the three or four operators needed each time. The warriors also assemble there at the same time in order to be present at the operation. Since the latter is very painful, the coolest part of the day is chosen. The boys pour cold water over each other, in order to become numb. The operation,
[752] [887] which is professionally performed by old men, especially Wandorobo, is the following /the following paragraph has been translated from the Latin of the original source/:

881 304 After the outer skin of the penis has been drawn back and the inner lamella of the foreskin nearest the back of the glans has been cut around with a knife, the glans lies in an elongated sheath, which is then cut on top so that the glans passes through. Half of the skin that thus hangs far down below the glans is removed, and the rest grows together within 14 days and, after healing, looks like an uvula (1).

1. The following should also be mentioned here /the rest of the footnote has been translated from the Latin/: In order to look cut (circumcised), boys sometimes smear the glans with the juice of an herb of the genus Euphorbia, called "ol jugi." The swelling glans prevents the foreskin from sliding forward.

[412] /63/ A finger-long, pointed, and double-edged knife serves as instrument. During the operation the boy sits with legs apart on the
[752] leather apron spread out on the ground. After it, the wounded part is washed with milk, which, caught in the apron together with the blood lost, is carried by the circumcised boy, who strides backwards for this, into his mother's hut and is poured on the ground there. An
[866] agent to stanch the blood is not used. During the circumcision
[626] itself the parents of the boy remain in their hut, for if the latter moans or cries out from the pain, they are punished with abusive

/66 cont./

881 place, they wait until that day. Shared pain is half the pain, and a certain coyness is part of good breeding among the brown Masai maidens too. The circumcision of boys and girls on one day takes place at different spots, and, while no female creature may come near the boys' place, so too no man or boy may enter the hut where, in the presence of her mother, the daughter is circumcised. On the day before the latter's head has been shaved and her hair tossed under the skin of the bed. She has removed all her ornaments and has clothed herself with a long apron (ol gĕla, el gelani), which her mother has made. The latter is now trying /67/ to make the parts coming into question numb

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[301] [292] →

[752] →

[29] [30] [142] ←

Jos. Deeg phot.

Ill. 20. Half-grown Masai girl.

with cold water and, during this, encouraging her little daughter sitting on the ground with beating heart. The operation is a simple excision of the clitoris and is performed with a sharpened piece of sheet iron (ol moronja) such as is used to shave the head. Then the small wound is washed with milk, which, together with the blood shed, seeps into the ground. A blood-stanching agent is not used here either. Until complete healing the girl remains, as es siboli (pl. es sibolio), in the hut of her mother. Instead of the bird skins and ostrich feathers that the boys put on, she wears around her forehead a ring plaited out

[304] [412]

[752]

[301] [302]

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752 164 Liver and spleen abcesses are supposed to be cut open to drain off the pus. I saw scars in the areas in question several times, but was never able to observe the operation itself.

757 164 For so-called bilious fever (ol odoa = the gall), an emetic is taken first, either a strong dose of grains of the ol odoa (Maesa lanceolata) or a bark extract of olti (Acacia mellifera); then one drinks a root decoction of ol deregeli (?) or of ol manuai (?).

To get rid of intestinal worms (taeniae [ol gurto, el gurt] and ascarids [ol budi, el budok]) one uses decoctions of the bark of ol mokotan (Albizzia anthelmintica), of the root of ol deregeli (?), of the fruits of ol odoa (Maesa lanceolata), or also of the powdered bark of ol jani 'njugi (Embelia kilimandscharica Gilg), the latter of which is always taken with fat since otherwise it is too acrid and easily causes violent abdominal pains with diarrhea.

To cure ancylostomiasis (eńg ɛ́a eń gijábe) one administers a decoction of the bark bast of ol mokotan (Albizzia anthelmintica); the bark bast is cooked with meat; the patient drinks the meat broth.

Venereal Diseases

757 [164] [548] Gonorrhea and especially lues are quite rare among the Masai. This is due in part to the absence of professional prostitution, and in part to the fact that the Masai are familiar with the dangerousness of these diseases and their easy transmissibility. Those stricken with lues are segregated and may not enter any kraal until the external symptoms of the illness have disappeared; during this time they live outside the kraal in a superficially built hut surrounded by thorn branches for protection against predatory animals. Accordingly lues is called eńg ɛa auló, formed out of eng ɛa = the sickness, auló = outside the kraal. Lues patients drink a great deal of liquid fat and liquid butter for a cure. One drips on the lues ulcers, as well as on [439] those of the chancres, juice of the leaves of ol aisigirai (?), sprinkles on them a powder made out of the leaves of ol agaramóni (?), or burns them with Cuprum sulfuricum, which the Masai obtain in trade with caravans.

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757 [164] [515] With toothache (eńg ga ol alai) one bites on a very hot residuum of fat with the aching tooth. Pieces of twigs of o'remit (Salvadora persica L.) and ol abalasas (Dodonaea viscosa L.) chewed to resemble a brush at one end serve as toothbrushes.

• [152] For rheumatic pains in the muscles one makes use of massage, which is practiced by the women, or one makes poultices with the pulp of the pulverized root of o'remit (Salvadora persica), which [593] also finds use otherwise as a "mustard plaster." Married men have [885] themselves massages by their wives to get rid of pains in the leg muscles after long marches, whereas the warriors scorn this help as unmanly. Furthermore one administers a root decoction, preferably mixed with a broth from steer meat, of o'rarait (Cissus rotundifolia [Forsk.] Vahl.) or of ol iogíóno (Pentas zanzibarica [Kl.] Vtke.), or also a decoction of the wood of ol gonjél (Rhamnus prinoides l'Herit.). For rheumatic pains in the back one drinks a root decoction, sweetened with honey, of ol asasia l os subertai (Osyris tenuifolia Engl.). To cure articular rheumatism a root decoction of ol ogíno (Boerhavia diffusa L.) is administered. Besides these remedies, those that are regarded as diaphoretic, especially the above-mentioned ol amboschi (Momordica cardiospermoides Kl.) and eńg aitetoijai kete (Aneilema Johnstonii K. Sch.), are also given.

276 [126] Other than for curative purposes the warriors regularly, and, to be sure, for the entire duration of their membership in the warrior standing, take various nerve /185/ stimulants. These are taken especially on war expeditions and, even more, during the meat feasts forming the preparation for these. One of the most popular stimulants is the bark of the frequently mentioned ol mokotan (Albizzia anthelmintica). One pounds a piece of bark bast the size of two hand-palms with a club and then lets it steep for a few minutes in still hot meat broth. The other stimulants are: ol dinjai or os sogurtuti (Cissus quadrangularis); an arm-long piece is cut up and boiled in water. The extract is taken mixed with goat-meat broth. Equally strong in effect is the root of ol ońgrua (?). One takes a piece of root three centimeters thick and approximately ten centimeters long, chops it twice, and cooks it with beef broth. The decoction smells disgusting.

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External Ailments

759
[232] Surgery is the domain of special surgeons (ol abŋi, el abŋ'i) who extend their practice both to human beings and to cattle, goats, sheep, and donkeys. The calling as a rule is handed down from father to son. One cannot speak of a special caste here, however, since the surgeons occupy no special social position -- either in a good or a bad sense. Only the son of an ol abani who knows how to practice the art is ol abani, and, to be sure, only so long as he practices it. If, by way of exception, someone whose father is not a surgeon learns the art, he thereby becomes a surgeon. The surgeon thus practices a open calling.

As payment for help rendered, the ol abani receives, according to the difficulty of the case or the amount of work done by him, a head of livestock, from a head of cattle down to a young goat or a lamb. One should also mention the remarkable arrangement that he can make a claim regarding the payment only if his treatment has had the desired result, and the patient /188/ need not pay before the resulting complete cure. An established custom determines what falls in the department of the surgeon. The ol abani stays within these prescribed limits under all circumstances. If this is not conducive to progress, it has the result, on the other hand, that every Masai, when necessary, entrusts himself immediately to the surgeon without hesitation. He knows that the latter will not undertake an operation on him which he cannot safely perform, but rather that whatever he does, he has often seen and has done with an older colleague or alone. No narcotic agents are available to the surgeon, but his patients have command over very "strong nerves," over an enviable mental sturdiness.

• [752]

752 The juice of ol gloriti (Acacia abyssinica), chewed out and spat into the wound, and the charcoal powder of ol dukui bark (Harrisonia abyssinica Oliv.) are used as astringent remedies.

Arteries have ligatures applied, if necessary, and, to be sure, by means of a leather strap placed around the limb, which is tightened by a short stick. The cut ends of the artery are then sewed together as quickly as possible with awl and tendon cord, after they

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752 have been grasped with the fingernails and pulled forward.

To the surgeon's department belongs first of all the extraction of teeth. This is done by three different methods. To remove the lower middle incisors, which among children is done for the first time at an early age and is then repeated after the change of teeth, one sticks the thin iron blade of an ax between the teeth and levers them out while tapping moderately hard laterally several times with a stick against the blade. The other front teeth are taken out only when they are already quite loose. One ties a string of cattle tendon around the crown of the tooth and a fist-sized stone at the other end of it. When this is done, the operator, for a very loose tooth, simply lets the stone fall, or, with one resting more firmly, throws it down. To remove a molar, one places a little stick almost finger-thick and approximately 20 centimeters long, with its lower end, notched swallowtail-like, against the tooth, and, to be sure, from inside, at right angles to the dental arch and then directs several vigorous blows against the free end of the stick. An assistant holds the patient's head. Tooth operations, with the exception of the ritual ones of course, are very rare. Among 100 men between the ages of 20 and 30 the author found two who each had a tooth gap. One had had a molar knocked out in the manner just described, the other had lost a front tooth through being butted by a head of cattle.

757 Bloodletting and cupping, on the other hand, are very common, especially for rheumatic pains and headache. To let blood from a vein on the head or at the extremities, /189/ the blood in a skin vein, in a forehead vein on the head, is first blocked by a leather strap placed around the neck or around the limb above the cupping

[511] place. Then the surgeon places himself in front of the patient, the bloodletting arrow (cf. Fig. 76) against the bow, aims, holding the arrow point only five to ten centimeters away from the cupping place, and shoots into the swollen vein. To stop the bleeding, the

[412] aforementioned strap is merely loosened. For cupping on the back, chest, and belly, not the arrow but the razor is used. With it incisions a centimeter long are made in the skin, which has been drawn up roll-like with two fingers. These are arranged in horizontal rows, each of which numbers 15 to 20 cuts. It is by no

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757 means rare that two or three rows are cut for one operation. Most adult Masai have such scars in greater numbers; however, one also often finds people whose entire torso is literally covered with cupping scars. It seems as though the people like to avoid being cut twice in the same spot.

Upon swellings one puts the pulp, allegedly acting as a resolvent, of the chewed plant of ol agaramóni (Crossandra nilotica Oliv.).

• 752 757 164 Abcesses, when they are ripe, are punctured with a small, pointed, double-edged knife and cut open only after the draining of the pus by pressure. Then the wound is washed out with tepid water and cleaned out, using the nail of the index finger, as well as possibly also the aforementioned knife, as a sharp spoon. Finally, one sprinkles on it a caustic powder made from the root of ol gneriandus l en doje (Plumbago ceylonica). The surgeon does not apply a bandage.

Abcesses of the mammary gland are merely punctured and emptied.

With panaritium the nail is removed and the wound washed out.

Suppurating lymph glands (ol gnarnari eti n̂ gimek) are treated like abcesses, but the lymph gland is cut out before the application of the caustic powder.

An ailment called ol dododoi l en daré = goat ulcers (1)

1. This is most probably a matter of anthrax carbuncle.

by the Masai manifests itself in that the person afflicted has one, less frequently two, hard lumps the size of a hazelnut under the skin, tapering into a taillike point at the bottom. I saw these ulcers (em boroi) and their scars -- somewhat larger than a mark piece -- on the temples, on the chest, on arms, legs, and on buttocks. As [753] the original cause the people cite the eating of meat of goats or sheep that died of eŋg ga nairogua = hot sickness (2).

2. Pulmonary anthrax.

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759 /189 cont./
[752] The hard lumps are cut out. During the illness the patient is given a diet of meat roasted on charcoal and, as medicine, a decoction of the roots of ol demellua /190/ (Solanum setaceum) or ol oki with the addition of honey; a root decoction of en gógi (Lycium cf. arabicum Schweinfurth) mixed with milk or meat broth or such of ol ameló̱ki (Maerua Johannis Vlks. et Gilg), which, as a rule, is mixed with a little honey or fresh livestock-blood, is also regarded as curative. The patient drinks this liquid when he is thirsty. The illness is supposed to lead to death if this diet is not adhered to and the patient takes in particular cold water or milk, as well as cooked meat. On the other hand, if the prescribed way of life is observed for two or three months, the lump, gradually pushing outwards, is said to fall off. Since, however, the continuous meat diet is too expensive and the herb medicines cannot be obtained without difficulty, the operation is preferred in by far the most cases.

752 [164] A persistent fever connected with swelling of the three pharyngeal tonsils, accompanied by violent coughing and considerable loss of strength, especially common in youthful age, the Masai call ert el muli = gland sickness. Very probably it is a matter of adenoidal proud flesh in the nasopharyngeal cavity. The patient turns to the surgeon to be cured. The latter, putting his hand into the patient's mouth, scrapes the pharyngeal tonsils with the nail of his index finger, or with a small knife, so strongly that they bleed profusely. A rather large number of people whom I questioned about the success of the cure asserted that they always could count on certain recovery. Two of my boys, Masai youths about 11 to 12 years old, fell ill with the above symptoms. In spite of careful symptomatic treatment, their recovery of strength was so unsatisfactory that, upon their request, I gave them permission to go to a nearby livestock-kraal in the steppe for relief. After eight to fourteen days they returned, healthy and refreshed, and told me, which corresponds to the truth, that the surgeon had treated them in the manner described.

Fresh, simple wounds (en duñoto, n dungot) are cleaned as was described above for the ulcers, but during this one tries to avoid unnecessary irritation, for fear of greater bleeding. On this account, many surgeons do not proceed with treating the wound until several

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• 752 hours after the wounding. After careful cleaning, the wound is closed by the twined-around suture. The edges of the wound, fitted together, are lifted slightly, as though into a fold, with two fingers of the left hand, whereupon the pointed awl is quickly thrust through the two edges of the wound in such a way that the puncture openings in and out are the same distance from the edge of the wound. Then the awl is drawn out again and in its place is inserted a needle-shaped thorn of ol debbe (Acacia Merkeri), ol debessi (Acacia verrugera), or ol giloriti (Acacia abyssinica). Under the projecting thorn ends a cord
[237] twisted out of cattle tendons is led around in a circle in several windings; then the cord ends are knotted /191/ and cut off a short distance above the knot. The individual needles are not placed closer than four centimeters apart, so that the pus can drain out between them unhindered. A fresh wound that seems insignificant for making a suture is covered with a paste, which consists of the scraped meat of the fruit ol darboi (Kigelia aethiopica), or with the leaf of o' rarait (Cissus rotundifolia [Forsk.] Vahl.). One also drips the juice of ol dorotua, of ol aisegerai kitok (Heliotropium Steudneri Vtke.) or of ol aisegerai l eñ gare (Verbena officinalis L.) into the wound.

On the edges of small children's nostrils that have been eaten raw by flies the mother puts a paste of chewed plants of eñ giloño or ekum (Spilanthus Acmella L.).

For penetrating wounds (e remoto, e remot), only the larger of the two openings is sewed up, which, since it is always a matter of spear or sword thrusts, is the thrust-entry opening. If this lies considerably higher than the thrust-exit one, the needles are placed closer than previously; if it lies equally high or lower, what was said above holds. Torn ear-lobes are sewed together like the wounds.

Old wounds (em baldăga, m baldagani) that will not heal are burned out with a knife made red-hot and then closed with a cooked and heavily thickened paste made out of water and the sifted earth of a termite hill placed on them. The so-called leg ulcers (em baldăga) are first burned out in the same manner. Then one pastes
[237] around the wound a border of cow dung a centimeter high, so that the wound itself forms the bottom of a bowl, and finally pours into it boiling sheep fat. For healing burns they are covered with a thick

/191 cont./

• 752 paste of the pounded leaves of a climbing species of asparagus (em bere e baba). The taking of an extract of the root and bark of ol [237] gelai mixed with cattle blood and milk is regarded as beneficial for the healing of suppurating wounds. The decoction of the wood of a Rhus species (ol mesigiẽ kete) is supposed to have a similar effect, in that taking it "makes the wound dry."

Sand fleas (1),

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1. The sand flea was brought into the Masai region in 1897 from Uganda. In June, 1897, it reached Kilimandscharo.

the females of which in particular eat into the soft skin parts of the feet, are removed as soon as they manifest themselves by an itching pressure resulting from their egg-swollen bodies. By means of a sharp scratch with a long acacia thorn, one pierces the layer of skin, usually only quite thin, lying over the sand flea (2)

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2. Here M. is mistaken: The tip of the rear abdomen of the female sand flea juts out into the open, without any skin covering. The Ed. Dr. S.

and then squeezes it out by lateral pressure. During this one is careful to avoid injuring the animal, so that healing will not be delayed.

/192/ For snake bite (a-tonjo 'l assurai) one thoroughly squeezes out the hastily ligated wound, around which one has also made a number of punctures with the sharp thorns of ol gurschaschi (Barleria mucronata) and then cauterizes it with a red-hot iron wire. At the same time the root of ol asajet is chewed, whereupon vomiting follows. This method, however, is customary only if the one bitten is unable to reach a surgeon. Otherwise one has the ol abani fetched immediately and, until his arrival, burns out the immediately ligated wound several times. Swellings of the lymph glands that may occur are also cauterized. If the ol abani regards the bite as only slightly poisonous, he enlarges it by means of a few incisions and sucks it out vigorously. But if he regards it as dangerous to life, he cuts out around the bitten spot a piece of muscle from the size of a nut to

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752 that of an egg or even amputates the member (hand, finger, toe), if
[758] this seems to him absolutely necessary. After the operation the patient is given raw sheep kidney to eat and a considerable amount of liquid sheep fat to drink, whereupon severe diarrhea soon sets in. Often one has him go through a sweat cure in that he is set over glowing charcoal on which leaves of Barleria mucronata and sheep hair are thrown.

On a scorpion sting (a-tonjo eñ golówa) one has a woman who has given birth to twins or, lacking such, a pregnant woman spit
[262] and rubs the saliva over the painful spot. As long as the pain continues,
[791] the patient eats only raw goat liver, to which is ascribed some kind of marvelous effect -- as is also shown by the fact that it is the only solid food of the ol oiboni.

Into the wound caused by a poisoned arrow another person urinates
[757] as quickly as possible. At the same time the wounded one is given as an emetic a mixture of the juice of the fruit of en dulele (Solanum campylacanthum) and the amniotic fluid (eñ géba) of a gravid sheep, which is slaughtered for this purpose.

757 For conjunctivitis (eñg ęa eñ goño) a tobacco extract (eñ gare ol gumbau) or the juice of leaves of ol ogildia (Coleus kilimandscharicus), ol dungui (Harrisonia abyssinica Oliv.) and ol assajet, or an extract of the leaves of ol gummi, is dripped into the eyes.

752 The surgeon removes the remains of a violently destroyed eye, by drawing it out of the eye socket, with an awl bent hook-shaped, far enough so that he can cut it off with the razor. The eye socket is then washed out with warm water and not bandaged afterwards.

A place that has suffered a sprain or bruise the El dorobo rub
[171] with the juice of ol gerigis (Iatropha spec.). Sometimes they also apply the same drug by the method of rubbing the powder of the charred twigs into small incisions that are made on that place.

/193/ Dislocated limbs are set again and placed in a splint bandage that is not stiff. For a lower-arm dislocation the surgeon sits on the ground in front of the patient, grasps his lower arm just above the wrist, and sets it again by a gradually stronger pulling exerted in the required direction. He then puts around the affected
[237] part, from the middle of the lower arm to that of the upper arm, which are drawn together at an angle of 135°, a padded bandage consisting of a strip of sheep leather that is covered with as much thick and soft hair as possible. The padded bandage is tied with a

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• 752 [239] narrow leather strap around it. Over this is put a second, stiffer bandage of dehaired neat's leather tied around like the first one. Finally, one fastens on the bandage, on both the inner and outer sides, a correspondingly bent wooden splint, with leather straps as before. The wooden splints are splinter-like and are only supposed to support the arm, not to stiffen it. The arm is tied up, in that one carries it in a sling put around the neck. The bandage is left on for about a month. The procedure is similar for other dislocations. A dislocated finger is not put in a splint. To set the lower extremities the patient lies flat on the ground.

For a bone fracture the surgeon investigates first the location and kind of fracture. With one or two bones lying together with a simple fracture, extension and counter-extension are done, as among us, by two assistants, while the surgeon takes care of the setting. Then he puts on the padded bandage and, on that, two flat, but firm splints, before he fastens the upper bandage of hard neat's skin with leather straps. For an arm fracture the bandage is left on for two months; for a leg fracture, longer. After an arm fracture is healed, the surgeon has the patient lift stones, at first light ones, then heavier ones, to strengthen the arm.

On the other hand, if the surgeon determines by contact that a bone of the lower arm or lower leg is badly crushed, he cuts the limb concerned open lengthwise on the outside as far as is necessary for the removal of the individual bone splinters. When these have been taken out, the arm is sewed up again with the bound-around suture. "Such operations are always successful, but it is more difficult with a crushing of the upper-arm or thigh bone; then one never knows whether one will be able to keep the arm or the leg." This is approximately how a surgeon standing in especially high repute expressed himself to me. Further statements of his revealed that this is far more frequently a matter of compound fractures. If the ol abani comes across such a case, he removes the bone splinters as before and, after he has put the tendons and muscles in order as much as possible, sews up the wound again. If, after eight to ten days, the fracture shows no tendency to heal and the patient suffers from fever, the surgeon proceeds to amputate.

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There might be described here a successful operation performed by the aforementioned ol abani: In November, 1901, a boy fractured the right tibia quite close to the knee and, soon after the accident, was carried by his friends to a European settlement several hours away. There they asked the European for his help, but he did not dare undertake the treatment and ordered the people to take the patient to the hospital of the military station of Moschi. Now whether the patient or his bearers did not agree with the plan to embark on a two-day journey is beside the point; in any case, the patient, on the following day, was brought to a rather large livestock-kraal to which the aforementioned surgeon, who, incidentally, lived six hours away, was fetched. He found a large, suppurating wound, out of which the lower end of the tibia projected, the marrow of which was likewise suppurating. The ol abani, proceeding from the wound, now cut open the lower leg on the tibia up to a handbreadth above the ankle and peeled out the lower end of the bone equally far. Then he broke this off about ten centimeters above the lower joint, removed the putrefying marrow from the rest of the tibia, cleaned the wound with warm water and by scraping out the upper part of it, and sewed it up with five thorns. Three months later the boy was already able to walk and to resume his work as herdsman.

Of foreign bodies one finds in wounds arrow points most frequently. Taking them out, is certainly more difficult than to take out other foreign bodies, and it will therefore suffice to discuss the method used for this, since those for the removal of more harmless objects will follow from that. First of all, it leads to an operation, of course, only if -- which is seldom the case -- the arrow is not poisoned or if -- which fortunately often occurs -- the poison has become ineffective through decomposition. Since in battle the torso as a rule is protected by shield and beside the leather cape also often deflects the arrow or at any rate greatly diminishes its force, deeper arrow wounds usually occur occur only on the extremities. If the entire arrow remains stuck in the wound, the operator knows immediately, without a lengthy examination, where the point rests and how it lies. If there are only muscles lying in front of the point in the direction of the shot, he quickly pushes the arrow through and draws out point and tang on the other side, the shaft on the shot-entry side. On the other hand, if bones lie in front of the arrow point, this method is automatically eliminated. Simply pulling out the arrow through the shot-entry

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opening is, however, impossible because of the barbs. The surgeon now has two methods. Which one he will employ depends upon the individual case. He either twists the arrow around in the wound until the barbs have become so filled and coated with muscle fibers that they are no longer /195/ able to offer resistance to a pull backwards, or he treats the arrow like a broken-off one, for which he has the following ways of operating. The point palpable by contact from the outside is removed in such a manner that one makes on the shortest path between it and the skin an incision as wide as is necessary in order to permit drawing it through. Since no forceps are at the disposal of the operator, but rather he must grasp with his fingers the arrow point to be removed, the incision must be quite large. A hidden point is sought in the following manner: the surgeon inserts his finger into the shot-entry channel and cuts through at the end of the fingertips from the outside inward, then sticks his finger into this opening and gropes farther into the shot channel, in order to make a second incision where his fingertip now lies. It goes on in this manner until he has reached the arrow point with his finger. If only muscles now lie in front of it, it is pushed forward with the finger in the direction of the shot, until it emerges. If a bone blocks this path, however, the operator either forces the arrow point away from its direction and toward the outside, or he cuts toward the arrow point from the outside in order, as described above, to remove it by way of this new channel.

An arrow point that penetrated into the abdominal cavity from the front is removed by an operation, although, according to statements of the surgeons, the prognosis is unfavorable. The case is more hopeful, on the other hand, if the arrow point penetrated into the abdominal cavity from the back and thereby has already encountered considerable resistance in the strong back muscles. In any case, an attempt to give relief by means of an operation is always made. The surgeon, with his finger, follows the shot-channel, for which this is often enlarged to an extraordinary extent with the knife, until he feels the point. The operation, of course, is most extensive when the arrow point is lodged in the stomach or in an intestine. After he has then drawn it out with his finger, he sutures the cut

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752 stomach or intestine with tendon cord and awl, then the inner and finally the outer wound-edges of the enlarged shot-entry opening. An arrow point that has penetrated into the lungs is taken out in a similar manner.

Spear thrusts in the abdomen are not uncommon in war. One or several intestinal coils are probably always injured by this. Moreover, a more or less large bundle of intestines always wells out from the thrust-entry opening and thus is exposed to the greatest soiling. Against the latter, one proceeds with the general lack of consideration in that a few companions of the wounded man wash the soiled intestinal parts with cold water at the nearest brook. In a cloth -- unclean -- attached around the neck at the top, around the hip strap at the bottom, the patient carries the welling-out intestines to the nearest dressing station. The surgeon then first sews up the intestinal tears with tendon cord and awl, then washes the intestine with warmed water, and then stuffs it through the thrust-entry opening back into the abdominal /196/ cavity. After that he sews up the outer wound-edges of the abdominal covering with the twined-around suture.

If an amputation is indicated, it takes place on the leg below the knee and on the whole arm at the nearest joint. Only on the thigh, even if there [732] exists the probability that a second amputation in the hip joint must be undertaken, is it performed first as much as possible 20 centimeters below the hip joint, at any rate not a stroke higher then necessary, so that fastening an artificial leg (Fig. 79) is possible. There is nothing special to be said about the technique of severing a limb in the joint. From the limb taken off two flaps of skin are preserved, which are drawn over the area of the incision and sewed together there. 732 The artificial leg is made of wood; its length is measured off on the sound leg. The upper [237] hollow into which the leg stump is set is lined with woolly sheepskin and bears two

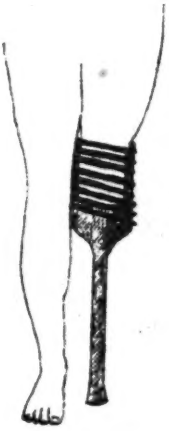

Fig. 79.